

**PROVIDENCE RIVER & HARBOR
SEEKONK RIVER
RHODE ISLAND**

**SURVEY
(REVIEW OF REPORTS)**



**DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.**

JUNE 1973



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02154

IN REPLY REFER TO:

NEDED-R

11 June 1973

SUBJECT: Providence River and Harbor and the Seekonk River,
Rhode Island.- Debris Study.

HQDA (DAEN-CWP-E)
WASH DC 20314

AUTHORIZATION

1. This report is submitted in response to the authority of three resolutions by the committee on Public Works of the United States Senate. The first Resolution, adopted 7 October 1965, relates only to Providence River and Harbor, while the second, adopted 6 June 1967, expands the study authority to include the Seekonk River up to the Main Street Dam in Pawtucket. Both Resolutions were sponsored by Senator John O. Pastore. The third resolution relates specifically to the Seekonk River. The Resolutions read as follows:

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act approved June 13, 1902, be, and is hereby requested to review the report of the Chief of Engineers on Providence River and Harbor, Rhode Island, published as Senate Document Numbered 93, Eighty-eighth Congress, and other pertinent reports with a view to determining the advisability of eliminating the sources of drift and debris by removal and disposal of dilapidated structures and derelicts along the shores of Providence Harbor, Rhode Island."

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act approved June 13, 1902, be, and is hereby requested to review the reports of the Chief of Engineers on (1) Providence River and Harbor, Rhode Island, published as Senate Document Numbered 93, Eighty-eighth Congress; (2) Pawtucket (Seekonk) River, Rhode Island, published as House Document Numbered 29, Seventy-third Congress; and (3) other pertinent reports, with a view to determining whether any modifications of the recommendations contained therein are advisable at the present time, with particular reference to elimination of the sources of drift and debris by removal and disposal of dilapidated structures and derelicts along the shores of Providence Harbor, including the Seekonk River, upstream to the Main Street Dam at Pawtucket, Rhode Island."

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby requested to review the report on Seekonk River, Rhode Island, House Document Numbered 79, 73d Congress and other pertinent reports with a view to determining if any modification of the existing project is advisable at this time."

2. In response to the third resolution stated above, the Seekonk River was considered as part of the Providence River and Harbor navigation study on which a favorable report was issued in June 1963. At that time, no improvement to the Seekonk River was found necessary or justified. However, these findings were inadvertently omitted from the Providence River report and are therefore included in this report.

PURPOSE AND EXTENT OF STUDY

3. The purpose of this study is to determine the engineering feasibility, and economic justification for Federal participation in a one-time cleanup program to rid the area of its sources of floatable debris, such as dilapidated shorefront structures, derelict (wrecked) vessels, loose onshore debris and shorefront dumps. An additional purpose is to determine the adequacy or inadequacy of existing governmental laws to cope with these debris problems.

4. All available pertinent data were used to complete this report. The data included U. S. Geological Survey topographic maps; National Ocean Survey Map No. 278; permit plans and data on certain tide-water structures from the Rhode Island Department of Natural Resources, Division of Harbors and Rivers; U. S. Coast Guard data on derelict vessels; and municipal maps completed by redevelopment, planning and assessment agencies.

DESCRIPTION

5. The study area, shown on the attached map, is limited to the perimeters of the Providence River and Harbor and the Seekonk River at the plane of mean high water. The limits, however, did not exclude consideration of nearby waterfront areas, such as the Warren River, which may contain sources of debris that could constitute potential drift problems within the study area limits. Six Rhode Island shorefront communities border the study area. They are: Providence, East Providence, Warwick, Pawtucket, Cranston and Barrington.

6. Providence River empties into the head of Narragansett Bay between Nyatt Point and Conimicut Point, about 8 1/2 miles downstream of the city of Providence. The upper 3/4 mile section lying above the Fox Point Hurricane Barrier is limited to small boat navigation due to 20-foot horizontal and 21-foot vertical clearances at the barrier gates. The 2 1/2 mile section of the river downstream from the barrier to the vicinity of Field Point, comprises the main portion of Providence Harbor. All land and shore facilities servicing the Port of Providence lie within this section of the river. The 5-mile long section of the river extending from Field Point to Conimicut Point is generally considered to comprise the outer harbor. Two coves on the west bank of the harbor, Pawtucket and Occupessatuxet, and one on the east bank, Bullocks Cove, are developed for and used by small fishing and recreational craft.

7. The Seekonk River is a tributary to the Providence River. It extends northerly from the vicinity of Bold and India Points, located at the northeast section of Providence Harbor, a distance of about 5 miles to the head of navigation at the Main Street Dam at Pawtucket. Warren River, emptying into the head of Narragansett Bay westward of Bristol Neck, has been extensively developed for use by recreational craft and to a lesser extent by fishing vessels.

8. The mean range of tide at Providence is 4.6 feet and the spring range is 5.7 feet. Tidal currents are weak in the approach channel and the harbor, except in the constricted parts of the Seekonk River. The prevailing winds are northwesterly except in July, when southwesterly as well as northwesterly winds occur. The heaviest gales are usually from the northwest. Fog is more prevalent during the winter and spring months, and is most frequent with easterly and southerly winds. The approach channel and the harbor are generally free of ice and navigable throughout the year. During severe winters the harbor and several miles of Providence River and Upper Narragansett Bay are occasionally frozen over, but the ice is usually kept broken up in the channels to the principal wharves by the traffic in the harbor.

IMPROVEMENTS DESIRED

9. A public meeting was held in Providence on 19 July 1967 to provide all interests the opportunity to express their views and desires, which in general, were as follows: Floating debris in the Providence River and Harbor and the Seekonk River emanating in part, from the many dilapidated waterfront structures and derelict vessels in the harbor is both an eyesore and a menace to commercial and recreational navigation and impedes the normal growth of recreational boating activities in the area; a waterfront cleanup project, aimed at the elimination of all sources of floatable debris is desired.

PROBLEMS UNDER INVESTIGATION

10. The primary difficulty attending navigation in the study area is that caused by recreational boats colliding with floating debris or drift resulting in damage to the boats. About 95% of these collisions occur in the Providence River where 97% of the 1000 recreational boats are based. Using 1968 as a typical year, 17,500 cubic feet of drift caused 148 boat-drift collisions representing a 15 percent boat-drift frequency. Additionally, contact with local vessel repair yards,

marine surveyors and the Rhode Island Pilots Association indicates that physical damages and delays to commercial vessels result from collisions with drift. However, these damages were found to constitute only a minor problem.

11. Sources of debris hinder the effective development or changes of shorefront land usage for commercial and recreational purposes. Therefore, these sources must be removed prior to the commencement of any project proposal at an additional cost to the project. This removal problem is especially important with regard to waterfront urban renewal projects. Debris sources also contribute to the drift washed up on private and public shores and floating in recreational boating berths. This drift presents a hazard to navigation and must be collected and disposed of, a costly operation. The sources of debris are a blight on the communities, a haven for rodents, a fire hazard, and a menace to the health and safety of people working and residing in the area.

PROJECT FORMULATION

12. In formulating the plan of improvement, consideration was of course, given to the desires of local interests, i. e. the removal and disposal of debris sources along the shorefront and in the tidal waters of the study area. A general map of the study area is inclosed. Several cleanup plans were considered to determine the most practical and least costly method for: (a) complete removal and disposal of those structures considered wholly dilapidated; (b) removal and disposal of those portions of structures found dilapidated, and partial reconstruction when the conditions and use of the structure economically justified repair; and (c) new construction. The latter phase would not be done as part of the cleanup project, but new structure costs (considered insignificant) are included to determine whether the estimated project benefits are sufficient to justify all of the planned work.

13. An effective one-time cleanup plan has been developed which would provide for: (a) floatable debris - remove, incinerate at sea, and dispose of burnt residue in an approved mainland dump; (b) non-floatable debris - remove, take to sea and dump. An extensive on-site examination of all sources of debris was completed in late 1969. The sources are waterfront structures, primarily timber pile supported wharves, and bulkheads; derelict (wrecked) timber vessels; loose on-shore floatable debris; and shorefront dumps. The

examination showed that (a) waterfront structures totaled 347, of which 133 are dilapidated and 28 others have portions dilapidated, representing about 479,200 cubic feet of material; (b) 57 wrecked vessels containing about 197,800 cubic feet of material; (c) loose on-shore debris, scattered over a 30 mile coastal zone, totaling about 70,500 cubic feet of material; and (d) 25 shorefront dumps, not one of which has a retaining structure to insure against debris entering the waterway. The total amount of debris, excluding debris existing in shorefront dumps, has been estimated at 747,500 cubic feet.

ESTIMATED FIRST COSTS AND ANNUAL CHARGES

14. While local interests were, early in 1972, advised that clean-up, as proposed, would cost about \$1,985,000, it is now close to 18 months later, necessitating an up date of project cost figures to reflect current (June 1973) price levels. On this basis the total cost of the considered plan of improvement is estimated at \$2,280,000 including \$2,095,000 for cleanup work to be undertaken by the Federal Government and non-Federal interests and \$185,000 for work to be undertaken by local interests solely for necessary new construction, repair of partly dilapidated structures in use and protective retaining structures for dumps. A summary of the total estimated improvement costs including related volumes of on-hand debris, by community is presented in the table below:

ESTIMATE OF FIRST COSTS

<u>Community</u>	<u>Volume</u> <u>Cu. Ft.</u>	<u>Federal and</u> <u>Non-Federal</u>	<u>Non</u> <u>Federal</u>	<u>Total</u> <u>Project</u>
Barrington	9,658	28,000	1,000	29,000
East Providence	272,488	675,000	42,000	717,000
Pawtucket	14,158	43,000	24,000	67,000
Providence	335,165	1,031,000	114,000	1,145,000
Cranston	103,092	283,000	3,000	286,000
Warwick	12,939	35,000	1,000	36,000
TOTALS	747,500	\$2,095,000*	\$185,000	\$2,280,000

*Subject to cost sharing.

15. Total annual charges for the considered improvement have been estimated at \$135,000 based on a 50 year life at 5 1/2 percent interest rate.

ESTIMATED BENEFITS

16. Benefits expected to accrue as a result of the considered plan have been studied. All major project benefits having a significant economic bearing on the improvement have been evaluated. As a result of the improvement, the major benefits would be: reduction in damage to recreational craft and commercial vessels due to drift-collision incidents, and enhancement of certain real estate values through changed or increased use of lands along the shore-front within the study area. These benefits are shown in the following table.

ESTIMATE OF BENEFITS

<u>Reduction in damages</u>	<u>Benefit</u>
a. Commercial vessels	\$ 16,000
b. Recreational Craft	114,000
II. <u>Real Estate Enhancement</u>	<u>300,000</u>
	\$430,000

17. The total average annual equivalent benefits have been estimated at \$430,000 and the total annual charges at \$135,000. The benefit-cost ratio is 3.2.

APPORTIONMENT OF COSTS

18. The removal and disposal of debris sources is partly urban renewal and partly water resources development. However, specific cost apportionment has not been established as yet by higher authority. Therefore, two alternatives for cost sharing were considered. One involves the water resource approach, the other involves the urban renewal approach. The objective is to determine what percentage of the proposed project cost local interests should be required to contribute. The six communities, plus the state of Rhode Island, constitute local interests. The table below demonstrates how the cost would be apportioned under these two alternatives.

COST APPORTIONMENT

<u>Alternative</u>	<u>Apportionment</u>				<u>Total</u>
	% Federal	\$	% Local	\$	\$
Water Resources	17.1	389,000	82.9	1,891,000	2,280,000
Urban Renewal	61.3	1,397,000	38.7	883,000	2,280,000

The cost for maintenance of waterfront land and facilities and enforcement of legislation to keep the area in a cleaned up condition is the responsibility of local interests.

LEGAL STUDY

19. A compilation and review of existing Federal, State, and local governmental laws, and studies were made to determine their adequacy or inadequacy to correct the debris problem for the area. The highlights of these legal findings are as follows:

a. The Corps of Engineers is the primary Federal agency with jurisdiction over debris sources.

b. The State of Rhode Island has jurisdiction over and is responsible for the general care and supervision of harbors and tidewaters. In this respect, the State has authority to prosecute for and to cause to be removed all unauthorized obstructions and encroachments therein.

c. Local communities have no significant authority over debris sources.

d. Possible recommendations for corrective legislation.

1. Eliminate a vessel owner's right to abandon. Suggest form of proposed statute should resemble the Canadian Government's "Navigable Waters Protection Act".

2. Legislation be enacted for Rhode Island waterways whereby State may repair private wharf property and may remove abandoned wharf structures and expenses incurred shall be recoverable from the owner and a lien placed upon the property.

3. Existing fines for violation of states dumping statutes are unrealistically low by today's standards and should be increased.

COORDINATION WITH OTHER AGENCIES

20. All Federal, State and local agencies known to have an interest in the Providence River debris study were notified of the public meeting held in Providence on 19 July 1967. Some of these agencies have been consulted during the study concerning the effects of the proposed improvement on their activities. The Rhode Island Department of Natural Resources has acted as the coordinating agency between this office and the six communities involved in the plan of improvement.

DISCUSSION

21. On 29 February 1972 and 13 July 1972, Corps representatives presented in detail study findings concerning the problems caused by debris sources and the Corps proposed solutions to these complex problems. As a result, the State Department of Natural Resources acting as coordinator at the local level subsequently responded that the six shorefront communities and the State of Rhode Island endorsed the Corps' plan for cleanup and were willing and able to participate. The official positions of the local communities are given in inclosures 2 through 8 and form a part of this report.

22. However, all further work on the study was stopped in February 1973 when it was learned that the Office of Management and Budget in Washington, D. C. made an unfavorable ruling on a similar study made for New York Harbor. OMB determined, after reviewing the New York Harbor debris report, that the plan should provide for debris removal without a subsidy by the Federal Government.

23. A great deal more information has been obtained and developed during the study than is indicated by this brief letter report. For example, drafts of four appendixes were nearly completed: APPENDIX A deals with plan formulation, estimates of first costs and annual charges, methods of removal and disposal, and time required to do the work. APPENDIX B (Evaluation of Benefits) is concerned with the effectiveness of a cleanup program to reduce drift in the study area. It discusses the complex relationship between the factors influencing shorefront decay, on-site debris volumes, and the annual rate each debris source enters the waterway and becomes drift. In addition, it presents the rationale for probable future damage to recreational craft and commercial vessels without cleanup and the estimated damage to be eliminated with cleanup. APPENDIX C explains the derivation of benefits from real

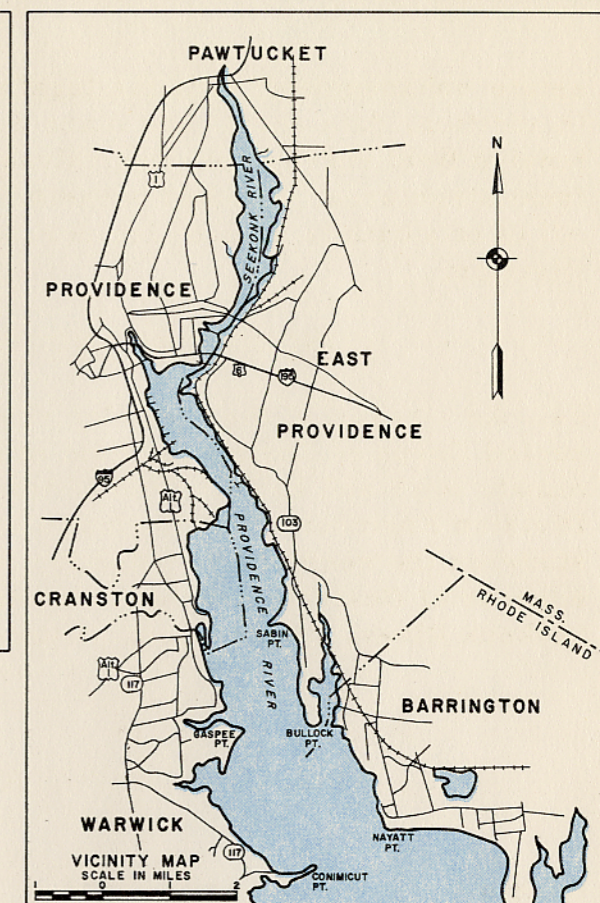
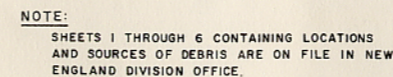
estate enhancement; and, the legal aspects are detailed in APPENDIX D. In addition, data sheets and maps developed during and after the extensive field survey, provide valuable information on dilapidated shorefront structures, wrecked vessels, and other shorefront facilities. All of this data is on hand for perusal in the files of the New England Division.

CONCLUSIONS AND RECOMMENDATIONS

24. As a result of the OMB decision, the Chief of Engineers has directed Corps of Engineers' field offices having debris studies to terminate work and submit brief letter reports thereon. Therefore, the Division Engineer, New England Division recommends no further study on the need and justification for removing and disposing of sources of floatable debris in Providence River and Harbor and the Seekonk River, Rhode Island be undertaken at this time.

JOHN H. MASON
Colonel, Corps of Engineers
Division Engineer

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December 7, 1972

Department of the Army
New England Division
Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02154

Re: NEDED-R
Removal and disposition of
debris sources in the
Providence and Seekonk Rivers

Attention: Division Engineer

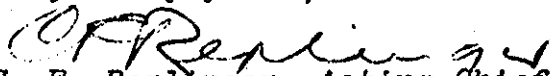
Gentlemen:

Meetings held on referenced subject on February 29 and July 13, 1972 by Ray Boyd of your office sparked considerable enthusiasm on the part of the representatives of the six (6) communities involved; however, those representatives did not have the authority to obligate their individual communities. Accordingly, letters were addressed to the chief executive in each municipality, setting forth the allocation of estimated cost based on related volumes of debris by community, resulting in the attached allocation:

Response to such letters was quite gratifying with one exception as indicated by copies of such correspondence. The Office of the Governor was contacted and authority was granted to include the estimated cost to be assumed by the state in the budget for the Division of Coastal Resources for the fiscal year 1973-74, in the amount of \$ 303,834.

On the basis of responses received, it is felt proper to indicate that the State of Rhode Island is decidedly in favor of the clean-up of the Providence and Seekonk Rivers. The one negative reply came from the chief executive of the City of Providence which was surprising in view of the whole-hearted support evidenced by representatives of that city. However, it is hoped that the Mayor of Providence can be prevailed upon to lend his support to the clean-up.

Very truly yours,


C. F. Replinger, Acting Chief
Division of Coastal Resources

CFR:ly
Enclosures

Incl 2



CITY OF PROVIDENCE
EXECUTIVE CHAMBER
PROVIDENCE, R.I.

JOSEPH A. DOORLEY, JR.
MAYOR

February 5, 1973

Mr. C.F. Replinger, Acting Chief
Division of Coastal Resources
Department of Natural Resources
Veterans' Memorial Building
Providence, Rhode Island 02903

Dear Mr. Replinger:

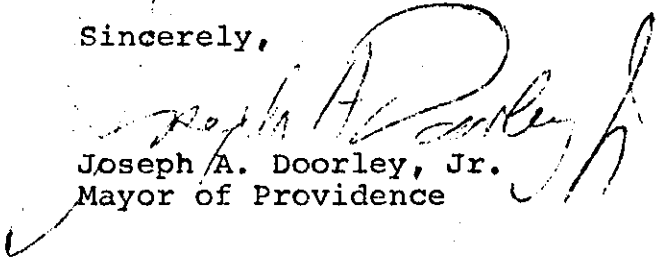
I am in receipt of your letter regarding the city's interest in the cleanup of the Providence and Seekonk Rivers.

As yet, I have received no communications from the Corps of Engineers explaining the higher cost of clearance along the Providence shoreline and until your letter I was never reapproached by the Corps or your department on Providence's interest.

I must say if this is any example of how they will run this project it will be another twenty years before anything happens.

The City of Providence is interested and will participate in the cleanup project when and if the Federal money ever becomes available.

Sincerely,



Joseph A. Doorley, Jr.
Mayor of Providence

JAD:tg

INCL 3

Mayor James L. Taft, Jr.



Executive Chamber/City Hall/Cranston, Rhode Island 02910

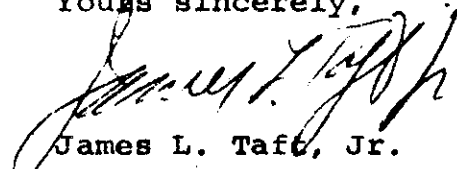
December 1, 1972

Mr. Charles Replinger
Acting Chief, Division of Coastal Resources
State Department of Natural Resources
83 Park Street
Providence, Rhode Island

Dear Mr. Replinger:

Please consider this letter as official notice that the City of Cranston will cooperate with your department and the U.S. Army Corps of Engineers in the project to remove debris in the Providence River. I have asked Stanton M. Latham, Director of Public Works, to act as my representative in this matter. Please direct all future correspondence on this matter to his attention.

Yours sincerely,


James L. Taft, Jr.
Mayor

JLT:jk



TOWN OF BARRINGTON
RHODE ISLAND

02806

TEL. 401-245-3103

ROBERT J. SCHIEDLER
TOWN MANAGER

September 12, 1972

Mr. C. F. Replinger, Acting Chief
Division of Coastal Resources
Department of Natural Resources
Veterans' Memorial Building
Providence, R. I. 02903

Dear Mr. Replinger:

I wish to advise you that the Barrington Town Council at its regular meeting on September 11, 1972, expressed its interest in participating in the proposed clean-up of the debris in the Providence and Seekonk Rivers.

Your letter dated June 9, 1972 indicated our estimated share of the cost to be \$5,117. based upon the U.S. Army Corps of Engineers report of the volume of debris existing in Barrington. Examining the location of the debris noted on the Corps' plans, we feel it may be possible for the Town and/or certain private parties to remove some of the existing debris, and we plan to proceed in this way.

It is my understanding that our share of the cost of the project will be based on the actual volumes of debris removed so that any work performed locally in this respect will reduce the final cost to the Town.

I would hope that unanimous cooperation can be obtained from all six communities involved to assure completion of this worthwhile undertaking. Thank you.

Very truly yours,

Robert J. Schiedler,
Town Manager.

RJS/m

Inc 5



City of East Providence
RHODE ISLAND

434-3311

OFFICE OF CITY MANAGER

October 16, 1972

State Department of Natural Resources
Division of Coastal Resources
83 Park Street
Providence, Rhode Island 02903

Attention: Mr. Replinger

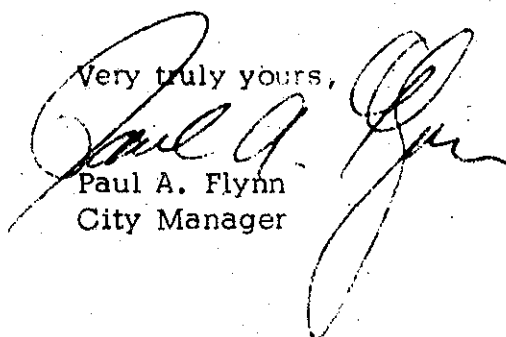
Subject: Seekonk & Providence Rivers Cleanup

Gentlemen:

It is a pleasure for me to advise you that the City of East Providence, acting under the direction of Mayor Samuel H. Ramsay, Jr., has set aside monies in the 1972-1973 annual budget towards the subject cleanup.

We look forward to meeting with the various cities and groups that will be engaged in this activity and you may be assured of our cooperation.

Very truly yours,


Paul A. Flynn
City Manager

PAF:mb



ROBERT F. BURNS
Mayor

City of Pawtucket Rhode Island

Office of the Mayor

July 17, 1972

C.F. Replinger, Acting Chief
Division of Coastal Resources
Veterans Memorial Building
Providence, R. I. 02903

Re: Debris removal- Seekonk River

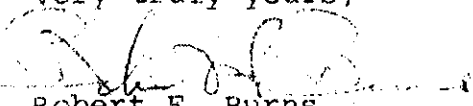
Dear Mr. Replinger:

In response to your letter of June 9, 1972 and the subsequent meeting held on July 13, 1972 which was attended by Eugene J. Jeffers, Pawtucket City Engineer, please be advised of our intent to participate in the debris removal project.

This participation is, of course, contingent upon full participation by the other communities associated with this project. Since copies of the Corps of Engineers study have not been finalized for distribution to the communities involved, final participation approval also is subject to receipt of the study and an evaluation of non-federal costs involved.

I would appreciate being kept up to date on this matter.

Very truly yours,


Robert F. Burns



Philip W. Noel, Mayor
Executive Chamber / City Hall / Warwick, Rhode Island 02896

June 14, 1972

John H. Mason
Colonel, Corps of Engineers
Deputy Division Engineer
United States Army
424 Trapelo Road
Waltham, Massachusetts

Dear Col. Mason:

I have received a copy of your letter of May 5, 1972, to Mr. Edward C. Hayes, Jr., regarding the proposed clean-up of the upper limits of Narragansett Bay. I understand that preliminary cost estimates set Warwick's share in this project to be \$6,017. Before our official participation in this project can be approved, I would require a more concrete statement of cost allocation and sharing schemes to finance this project as well as a description of the nature and extent of the clean-up along Warwick's shores.

I have instructed Mr. Robert J. Barrett, Executive Director of the Warwick Waterfront and Park Commission, and Mr. Tony Lachowicz, Senior Planner, Warwick Department of City Planning, to act as liaison in my behalf for this project. I would appreciate your cooperation with them and request that they be contacted at your earliest convenience to clarify matters.

Thank you very much for your attention, and we look forward to participating in the debris removal plan as it is proposed by the Corps of Engineers.

Very truly yours,

Philip W. Noel, Mayor

PWN:nw

cc: Mr. Robert J. Barrett
Mr. Tony Lachowicz
✓ Mr. C. F. Replinger

INCL 9